

rences of rare and accidental visitors in my note-book since my list went to press :—

Strix otus.—A third specimen of this common European Owl, but which appears to be only an accidental visitor to Malta, was taken on the 17th December last, and is now in my possession.

Passer petronia.—Another example of this species, which, I am informed, is very common in Naples, where it is taken in nets in great numbers, and migrates in spring and autumn, was captured alive in February this year (1864), and is in the possession of Dr. Gulia.

Emberiza cirrus.—I obtained another example, taken alive in 1863.

Hirundo rupestris.—This Swallow appears to be less given to roaming than any of its congeners, and it has even been doubted whether it is a migrant at all. It may perhaps be for this reason that we seldom see it here, whilst the other species, *H. rustica* and *H. urbica*, are plentiful during the migratory seasons. My first acquaintance with *H. rupestris* in these islands was in December last, when spending a day in Gozo. There were several of them flying over the town and along the fronts of the houses in the streets, and round the ditch of the old fortifications, which is used as a fruit- and vegetable-garden. The day was cold, but clear. On revisiting the island about a month afterwards, on the 26th January, I again met with them the first thing on landing. On neither occasion was any other species to be seen, nor do any of the Swallows or Swifts generally winter here. Again, at the interval of about another month (on the 20th of February), I observed a specimen in the Malta market. All this serves to prove the sedentary tendency of the *H. rupestris*; but that it does sometimes migrate there can be no doubt.

XXIII.—On the Birds of the Comoro Islands.

By P. L. SCLATER, M.A., Ph.D., F.R.S., &c.

(Plate VII.)

THE Comoros are a group of four islands lying in the northern part of the Mozambique Channel, between Madagascar and the



J. Wolf del. lith.

M. N. Hanhart imp.

ACCIPITER FRANCISI

opposite coast of Africa. They are all of volcanic origin, and probably of quite recent formation; but only one of them (Great Comoro) is now an active volcano, the other three (Mohilla, Joanna or Anjuan, and Mayotte) being in a quiescent state.

The great western current from the Indian Ocean which sets round Cape Ambro, at the northern termination of Madagascar, impinges with full force on the Comoros, and then passes down the Mozambique Channel at a rate of ninety miles a day in some parts, but varying according to the strength of the prevalent monsoon. It thus appears to have come about that the Comoros have been peopled with life from Madagascar, and that but very few African forms have as yet reached them. The vegetation of the Comoros is, as I am informed by Dr. John Kirk, entirely that of Madagascar, but with an admixture of Indian weeds, such as are found in the Mascarene Islands and in other spots subject to the eastern monsoon. The only exception noted by Dr. Kirk to the Madagascanian facies of vegetation was in the case of a species of *Clematis*. Of this genus an African species was common in the Comoros, and the corresponding Madagascanian species was not noted there.

In the fauna of the Comoros, as far as we are acquainted with it, the same is the case as with the flora. The mammals are few in number, but those found are all of Madagascanian origin. The *Lemuridae* are represented by a single species, the *Lemur anjuanensis*. Dr. Peters records the existence of this animal in Joanna (whence it has derived its name); and Dr. Kirk tells me he also met with it in the same island, in the forests, at about 2500 feet above the sea-level. Several specimens of a *Centetes* (probably *C. ecaudatus*) were also obtained by Dr. Kirk in Joanna; and according to native testimony, as Dr. Kirk informs me, the *Centetes* also occurs in Mohilla. The only other species of mammal I can record from the Comoros is *Pteropus edwardsii*, which was obtained by Dr. Peters* and by Capt. Speke† in Joanna. All these three species are strictly Madagascanian and not African forms. With regard to birds, as we shall see further on, nearly the whole of the recorded species are Madagascanian. Reptiles, Dr. Kirk tells me, are almost unknown in the Comoros.

* Zool. Reise, i. p. 23.

† See P. Z. S. 1861, p. 268.

A large Crocodile (perhaps *Crocodilus vulgaris**) was recently cast ashore at Joanna, but destroyed by the natives before it had reached the marshes.

I will now proceed to say a few words on each of the four islands, borrowing my remarks nearly entirely from some notes kindly prepared for me by Dr. Kirk :—

“GRAND COMORO is the largest island of the group, the nearest to Africa, and the most northern. In 1858 it was an active volcano; and a stream of lava, which flowed from the eastern side, covered a rich valley, and passed into the sea, where it altered the outline of one of the harbours. On this island there is not much cultivated land, the volcano, a rounded peak probably 8000 feet high, rising directly from the shore. Unlike the other islands, Grand Comoro is bare, and, seen from a few miles’ distance, appears destitute of the damp forest which clothes Joanna. Grand Comoro has not been visited by naturalists, and of its productions nothing whatever is known. The inhabitants are said to be constantly at war with one another, and inhospitable to strangers; they seem to be of more purely African blood, and to have less admixture of Arabic race, than those of the others of the group. As servants they are much esteemed at Zanzibar, and their language and features are those of the common people of the other islands, who are by no means either fierce or warlike. Their language is very nearly allied to the ‘Makoa’ dialect of the continent of Africa, which belongs to the system of South-Equatorial African languages. The introduction of Hova blood from Madagascar is of very recent occurrence in Grand Comoro, and has not yet in any respect modified the people.

“The next island of MOHILLA is the smallest of the group. As in the others, its rocks are formed of a volcanic lava, more or less spongy or compact. There are several good flat pieces of land on the island, suitable for the growth of cane; but the people are in a degraded state, with a dominant aristocracy of emigrant Malagasies, who have converted the island into an entrepôt for the slave-trade. Cocoa-nuts and rice are cultivated, and the

* This species was recently received by the Zoological Society from Madagascar.

hill-slopes afford timber of considerable size ; but there does not exist the damp primeval forest which clothes Joanna. The main peak of Mohilla is only about 4000 feet high, and therefore catches very little moisture. A few birds were obtained while we touched at this island, and a considerable number of plants. The Mammalia spoken of by the people were the *Centetes*, called by the same name as in Joanna, 'Landa,' and a large frugivorous Bat. The latter was extremely common, during the day hanging in dark masses on the branches of shaded trees. Their food was principally wild figs and the fruit of the *Vitex*. Their flesh is extremely good, tender, and well-flavoured. Pigeons of several sorts were seen ; and a dark Parrot (*Coracopsis comorensis*), Bee-eaters (*Merops superciliosus*), and a small Kingfisher were met with in the belt of vegetation along the coast."

Such are Dr. Kirk's notes on Mohilla. I am not aware that any other naturalist has ever visited the island. The species of birds obtained by Dr. Kirk during his short stay were four, namely—

Hypsipetes ourovang.

Foudia madagascariensis.

Bernieria madagascariensis.

Merops superciliosus.

JOANNA, or ANJUAN, the third island of the Comoros, is the one with which we are best acquainted. Dr. W. Peters, of Berlin, made a short stay here during his residence in Mozambique ; and, although the second volume of the 'Zoologische Reise,' treating of the birds, is not yet published, Dr. Peters's kindness in sending me a written notice of the species obtained there has enabled me to introduce them into my list.

Dr. Kirk, who also visited Joanna on several occasions during his service with the recent Zambesi expedition, gives me the following notes on this island :—

"Joanna seems to be the most humid of the Comoro group. A ridge of high land, rising in places to 6000 feet above the sea-level, extends all through the island, with passes, however, across it not exceeding 3000 feet. The slopes of this range are intersected by deep ravines, and it is by no means possible to pass at will from one ridge to another. The rocks are precipitous, and overgrown with a tangled mesh of vegetation, covering deep cracks and fissures. Higher up a dense forest of great trees, hung with

ferns and lycopodiums, clothes the hills. The soil consists of damp, decaying vegetation, the shade being too damp to allow of grass. These are the haunts of the *Lemur anjuanensis*, which may be found in pairs, of a cold morning, rolled up in a ball, perched on some branch. The Parrot peculiar to these islands and a large, plump, solitary Pigeon are also found in these forests. The latter is a fine bird, making a good appearance on the table. The *Centetes* runs about among the rotten branches in search of insects. The *Centetes* is strictly a nocturnal animal; but in the daytime, with the assistance of a dog, may be found easily, as it hides under a leaf or a log of wood. Sometimes, when started, it makes off with a number of young ones in a line after it. It is not at all fierce, but, when caught old, is rather dangerous, giving a nasty wound with its long tusks. The young ones, however, soon become quiet, and, on board ship, are extremely useful, devouring at night great numbers of cockroaches, and remaining concealed during the day. Both old and young *Centetes*, however, eat fruit as well as insects, and are very fond of flesh. Mr. W. Sunley, H. B. M. Consul for the islands (resident at Joanna, where he owns a large sugar-estate), informed me that some carnivorous animal exists on the island. While Dr. Dickinson lived there, one was obtained for him; but, being allowed to get loose, it killed in one night several of his fowls. A Rat, with a musky odour, is also a great annoyance in Joanna, tainting wine, sugar, and anything it may pass over. In the rivers of Joanna are four or more species of fish, which offer sport to the angler; but the streams are small. In the marshes an Eel is found, differing from the species in the streams. In the forest and near the sides of the mountain-torrents a large Land-Crab is said to exist, but to be rare. A *Cyclostoma* picked up proved to be of the division peculiar to the Mascarene Islands, Madagascar, and the Seychelles.

“A small hill-tarn, 2000 feet above the sea, named Zalanza, the head of one of the ravines shut off by a transverse dyke, contains a bird and fish reputed to be sacred. The people (not the Arab portion) annually make a visit to the lake, and certain rites are performed. It is difficult to get them to conduct strangers thither, and such persons are commonly made to leave

their arms behind before descending to the water. The people speak in an under tone when looking at the lake; and upon the occasion of our visit a small earthenware altar, on which incense had been burned, was seen under an old tree. Our desire to visit the spot arose from stories regarding the sacred bird, which was stated to be wingless. Once there, we stuck to our guns, and were successful in deciding that the wingless bird was no other than a small Dabchick (*Podiceps*, sp.), very like the one found on the mainland near Mozambique. The fish we did not see; and being unprovided with rod and line, we left the second divinity for future explorers to investigate. On the lake were seen also several Ducks, but none were obtained."

Dr. Kirk did not obtain any specimens of birds in Joanna; but the late Dr. John Dickinson (whose name he introduces, and who remained several weeks in Joanna in 1861 whilst on his route to join the Central African Mission party on the Shiré) collected assiduously during his stay; and it is mainly upon Dr. Dickinson's collections, which have been kindly submitted to my examination by his brother, Mr. R. Dickinson, of Jarrow-upon-Tyne, that I have been able to construct the following list of birds of the Comoro Islands group.

MAYOTTE, the last of the Comoros, and nearest Madagascar, is in the possession of the French. I believe that a few birds have been obtained in this island by some of the French naturalists who have visited Madagascar; but I can mention none of them, except *Tchitrea pretiosa*, which is recorded as from that locality by Lesson.

From these various sources it appears, as will be seen by the following list, that we are at present acquainted with twenty-three species of birds from the Comoro Islands. Of these two only (*Falco minor* and *Turtur semitorquatus*) are African species that have not as yet been found in Madagascar, the *Numida* remaining doubtful; and two (*Nectarinia comorensis* and *Coracopsis comorensis*) are, as far as we know, peculiar to the Comoro group. *Coracopsis*, however, is a genus peculiar to Madagascar, and the species is not, in my opinion, a very distinct one. So, on the whole, we must consider the Comoros, as regards their ornithology, as purely Madagascanian.

Order ACCIPITRES.

1. *FALCO MINOR*, Bp. Rev. de Zool. 1850, p. 484 : Gurney, Ibis, 1861, p. 131.

One example of this Falcon was procured by the late Dr. Dickinson in Joanna. He notes the "eye" as "very dark blue." The bird has not yet been recorded from Madagascar, but is a South-African species which occurs in Natal, as noticed by Mr. Gurney, *l. c.*

2. *ACCIPITER FRANCESI*, A. Smith : Hartl. Orn. Mad. p. 20. (Pl. VII.)

Two examples, apparently a pair, of this pretty little Hawk were obtained on Joanna by the late Dr. Dickinson. As the species is rather rare in collections, and has never yet been figured, Mr. Wolf's accompanying drawing of it, for which we are indebted to the liberality of Mr. J. H. Gurney, will probably be acceptable. The following are the dimensions of Dr. Dickinson's specimens, which are alike in plumage :—

	Long. tota,	alæ,	caudæ,	tarsi.
Presumed male	10·0	5·5	4·5	1·8
„ female	10·5	6·2	5·0	2·0

The bird is well described by Dr. Hartlaub, *l. c.*

3. *CIRCUS MAILLARDI*, Verreaux ; Ibis, 1863, pl. 4. p. 163. *C. melanoleucus*, Hartl. *l. c.* p. 21.

An adult male of this Harrier is in Dr. Dickinson's collection from Joanna Island, and is of much interest as confirming my former opinion as to the distinctness of this species.

4. *MILVUS ÆGYPTIUS*, Gm. *Milvus parasiticus*, Hartl. *l. c.* p. 19.

One example of this Kite is in Dr. Dickinson's collection from Joanna. It was also observed, on one occasion in great abundance, by Dr. Kirk on the sea-coast of the same island, near Pomone, in the month of August.

Order PASSERES.

5. *HYPsipETES OUROVANG* (Gm.) : Hartl. *l. c.* p. 44.

Mohilla (*Kirk*). One example, "shot in the forest near the foot of the hills near Oane, in the month of February."

6. *BERNIERIA MADAGASCARIENSIS* (Gm.): Hartl. *l. c.* p. 53.
Mohilla (*Kirk*). "Shot in the same place as the *Hypsipetes*."

7. *DICRURUS FORFICATUS* (Linn.): Hartl. *l. c.* p. 49. *Dicrurus*, sp., Selater, P. Z. S. 1861, p. 268.

Joanna (*Dickinson*). Dr. Kirk tells me this Drongo is "common in the open spaces of the forest above Pomone, in Joanna." It is a very common bird in Madagascar.

8. *MUSCIPETA PRETIOSA* (Less.). *Tchitrea pretiosa*, Less. Descr. Mamm. et Ois. p. 324; Hartl. *l. c.* p. 46.

Mayotte (*Lesson*). I am not acquainted with this species. Capt. Speke (as I have mentioned, P. Z. S. 1861, p. 268) brought two birds in spirits from Joanna, when he touched there on his way up to Zanzibar from the Cape, one of which was of this genus.

9. *NECTARINIA COMORENSIS*, Peters, sp. nov.

N. capite colloque splendide viridibus: fascia pectorali ferrugineo-rufa: macula pectorali laterali aurantiaca: abdomine alisque fusco-nigris: cauda anthracina, rostro et pedibus nigris.

Long. tota 0.120, alæ 0.060, caudæ 0.040, rostri 0.020, tarsi 0.019 mill.

Hab. Joanna Island (*Peters*).

Dr. Peters has kindly communicated to me the characters of this new species of *Nectarinia*, which he discovered during his short stay in Joanna.

10. *FOUDIA MADAGASCARIENSIS* (Linn.): Hartl. *l. c.* p. 55.

Mohilla (*Kirk*). "Obtained in a reedy marsh near Oane."

Order FISSIROSTRES.

11. *LEPTOSOMUS DISCOLOR* (Herm.). *Leptosomus afer*, Hartl. *l. c.* p. 63.

One example of this very curious bird was obtained in Joanna by Dr. Dickinson. It is certainly more nearly allied to the Rollers (*Coraciidæ*) than to the Cuckoos (*Cuculidæ*), with which it is generally placed.

12. *MEROPS SUPERCILIOSUS*, Linn.: Hartl. *l. c.* p. 31.

Mohilla Island (*Kirk*). From the sugar-plantations near Oane; seen flying about in small numbers.

Order SCANSORES.

13. *CORACOPSIS COMORENSIS*, Peters, Monatsb. Berl. Acad. 1854, p. 371 : Hartl. *l. c.* p. 59.

Dr. Peters discovered this species in Joanna. One example of it was obtained in the same island by Mr. C. Livingstone, and presented to the British Museum. Dr. Kirk observed it, when in Mr. Livingstone's company, on the western slope of the hills in Joanna Island, above Pomone, in the thick forest. It did not appear to be very common.

Order COLUMBÆ.

14. *ALECTRÆNAS SGANZINI* (Verreaux). *Funingus sganzini*, Bp. Consp. ii. p. 29 : Hartl. *l. c.* p. 64.

An imperfect skin of Dr. Dickinson's, from Joanna, is apparently referable to this species. It is well described by Bonaparte, *l. c.*, as "*Similis A. pulcherrimæ*, sed pileo haud rubro et absque carunculis." There is a better specimen from the same locality in the British Museum.

Dr. Kirk informs me that this Pigeon is very common in Joanna. He met with it in abundance in the forest, up to about 1000 feet elevation, and thence to the base of the hills. Dr. Kirk likewise found two other species of *Columbidæ* in the same forest, of which no specimens were obtained.

15. *TURTUR SEMITORQUATUS*, Sw. : Bp. Consp. ii. p. 64.

Two examples of this Turtle, from Joanna, are in Dr. Dickinson's collection. It is a common and well-known species on the opposite coast of Eastern Africa, but, so far as I am aware, has not yet been met with in Madagascar.

Order GALLINÆ.

16. *NUMIDA MITRATA*, Licht. ?

A Guinea-fowl is found wild in the forest on the east side of Joanna, where it was observed by Dr. Kirk. The specimens obtained were devoted to the table ; but Dr. Kirk considers them not to have been different from the ordinary continental *Numida mitrata*. The Madagascar form, *N. tiarata*, is so similar

(*quære*, are they really distinct?), that it is just as likely to have been the latter species.

Dr. Peters also obtained specimens of a species of *Numida* in Joanna.

Order GRALLÆ.

17. ARDEA COMATA, Pallas : Hartl. *l. c.* p. 74. .

Joanna (*Dickinson*). Dr. Kirk reports this Heron to be common in the marshes on the sea-coast near Pomone.

18. CHARADRIUS, sp.

19. CHARADRIUS, sp.

Dr. Peters obtained two species of Plovers at Joanna, probably two of the species indicated by Hartlaub, *l. c.* p. 72.

20. STREPSILAS INTERPRES, Linn. : Hartl. *l. c.* p. 73.

Joanna (*Peters*).

21. TRINGOIDES HYPOLEUCUS (Linn.) : Hartl. *l. c.* p. 77.

One example. Joanna (*Dickinson*).

Order NATATORES.

22. PODICEPS, sp.?

Dr. Kirk met with a small Grebe in Lake Zalanza, in Joanna, a small hill-tarn 2000 feet above the sea-level. It is quite unknown elsewhere in the island. The natives of Joanna go every year at certain times to worship it, and burn incense to it on an altar. A large *fish* shares with it the divine honours. Dr. Kirk noted Ducks (*Dendrocygna viduata*?) in the same spot. (See his notes, *anteà*, p. 296.)

23. PRION BANKSII, Smith, Ill. S. Afr. Zool. pl. 55.

One example from Joanna (*Dickinson*). Dr. Kirk tells me this Petrel is common in the Mozambique Channel.

XXIV.—*On the Rapacious Birds collected by the late Dr. Dickinson in the Zambesi Region.* By P. L. SCLATER, M.A., Ph.D., F.R.S., &c.

(Plate VII.)

A SERIES of skins of rapacious birds, collected by the late Dr. John Dickinson on the Zambesi and its affluents, having been